

REMARKS

Applicants are further amending the above-identified application by adding new claims 15 and 16 to the application. These new claims 15 and 16, dependent respectively on claims 14 and 13, recite that the insulating film is a silicon oxide film.

The concurrently filed Request for Continued Examination (RCE) Transmittal for the above-identified application is noted. This RCE Transmittal, inter alia, requests entry of the Amendment filed May 12, 2003, which was denied entry per the Advisory Action mailed May 29, 2003. In view of the entry of the Amendment filed May 12, 2003, and comments by the Examiner in connection with the Continuation of Item 10 on page 2 of the Advisory Action mailed May 29, 2003, it is respectfully submitted that the rejection under the second paragraph of 35 USC § 112 as set forth in the Final Office Action mailed February 11, 2003, has been overcome.

Applicants note the contention by the Examiner in the Continuation of Item 5 on page 2 of the aforementioned Advisory Action, that the applied IBM Technical Disclosure Bulletin "recognizes that rhenium, osmium, ruthenium and iridium can be used in interconnect as well as contact applications and that they are excellent barriers against the diffusion of copper".

However, note that the IBM Technical Disclosure Bulletin article addresses the problem of a diffusion barrier between copper and silicon, and requires that such diffusion barrier "does not interact with silicon". With this requirement (that is, that the diffusion barrier does not interact with silicon), the article discloses specific barrier materials. It is respectfully submitted that the diffusion barrier described in the IBM Technical Disclosure Bulletin article is specific to structure wherein the barrier is between copper and silicon. This document provides no description with respect to a

diffusion barrier between copper and an insulating film, as in the present claims, much less between a copper film and silicon oxide as in newly added claims 15 and 16. It is respectfully submitted that the article in the IBM Technical Disclosure Bulletin would have neither disclosed nor would have suggested use of an element selected from the group consisting of rhodium, ruthenium, iridium, osmium and platinum between the copper film and the insulating film, as in present claims 13 and 14, or between the copper film and silicon oxide as in claims 15 and 16.

Moreover, note that claims 13 and 14 recite a neighboring film and a diffusion barrier film, with the diffusion barrier film being further than the neighboring film from the copper film, the neighboring film having the primary constituent element thereof being an element selected from the group consisting of rhodium, ruthenium, iridium, osmium and platinum, with material of the diffusion barrier film also being defined. It is respectfully submitted that the combined teachings of the applied references would have neither disclosed nor would have suggested such layered interconnection structure including, inter alia, the neighboring film and the diffusion barrier film, with the diffusion barrier film being specifically positioned as in present claims 13 and 14, and advantages thereof.

Entry of the present amendments and of the amendments in the Amendment After Final Rejection filed May 12, 2003, and reconsideration and allowance of all claims pending in the application, are respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in fees due in connection with the filing of

this paper, including extension of time fees, to the Deposit Account No. 01-2135 (Case No. 501.36931CX1) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "William I. Solomon", with a long horizontal flourish extending to the right.

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